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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,937	01/16/2004	David Jonathan Hall	213408-00037	4642

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PATENT ADMINISTRATOR
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EXAMINER	
SHAHRESTANI, NASIR	
ART UNIT	**PAPER NUMBER**
3737	

MAIL DATE	DELIVERY MODE
07/09/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/757,937	HALL, DAVID JONATHAN	
	Examiner	Art Unit	
	NASIR SHAHRESTANI	3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 April 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-9 and 11-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3-8, 13-27* is/are rejected.

7)☒ Claim(s) *9,11 and 12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1, 3-9, 11-27, have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3-5, 15, 18-27, are rejected under 35 U.S.C. 103(a) as being unpatentable over Wake (US 2002/0100864 A1) in view of Tsikos et al. (U.S. 6,736,321 B2).

Wake teaches a method and corresponding system for optical imaging comprising the steps of injecting a pulse of light at an injection port into an object (fig. 1 and 2); collecting at collection ports, light from said object (par. [0020]), to provide an optical signal based TPSF (par. [0022]); and detecting on or more selected time gates of said TPSF to provide information to be used in producing an optical image of said scattering object (par. [0022]).

Wake further teaches wherein said light from said object is collected at two or more locations (detectors 12); wherein desired temporal delays are introduced in propagation of the optical signals (fig. 9A) to produce time delayed TPSF's (circuit 106) and wherein all of said

selected time-gates are simultaneously detected (par. [0060]); and further teaches wherein the detector positions are proximal (fig. 2).

Wake further teaches the use of a fiber optic cable or bundle of varying lengths for directing a laser beam (par. [0020]), which can be adjusted to introduce the desired delays (par. [0080]) being coupled to one or more detectors and applied to a distinct detecting position (fig. 6).

Wake further teach a time delay circuit (element 106) which introduces a time delay to fine tune the synchronization pulse (par. 0082) and a programmable delay chip which in conjunction with a time-gating signal (element 128) which samples a portion of the TPSF curve that will be coupled an integrator (par. 0083).

Wake does not specifically teach the introduction temporal/optical delay.

Tiskos et al. teach a planar laser illumination and imaging system employing wavefront control methods (see title) wherein an optical system (fig. 1I17C) is provided with introduction of temporal phase delay at each control point along a wavefront.

It would have been obvious to one of ordinary skill in the art at the time of invention to have modified the apparatus and method as taught by Wake and to have incorporated the teachings of Tsikos et al. in order to reduce the power of speckle pattern noise (Tsikos et al. - abstract).

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wake (US 2002/0100864 A1) in view of Tsikos et al. (U.S. 6,736,321 B2) and in further view of Grable (US 5,692,511). Wake in view of Tsikos et al. teach all the limitations of claims 1 and 5, but do not teach the basis of selecting time-gates. Grable teaches the measurement criteria considering properties of light and thickness of the desired medium to be measured (col. 12 lines 60-62). It would have been obvious to one of ordinary skill in the art to have modified Wake in view of Tsikos et al. and to further include the considerations as taught by Grable in order to provide for optimal measurement of the medium and to reduce diagnosis time by selecting appropriate time-gates.

Claims 13-14, 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wake (US 2002/0100864 A1) in view of Tsikos et al. (U.S. 6,736,321 B2) and in further view of Mukherjee et al. (US 2002/0067901). Wake in view of Tsikos et al. teach all the limitations of claim 1 but do not teach using a time-gated camera being and ICCD camera. Mukherjee teaches the aforementioned limitation wherein an object or medium is imaged using a fast time-gated camera such as an ICCD camera (par. [0039]). It would have been obvious to one of ordinary skill in the art to have modified Wake in view of Tsikos et al. and to provide ICCD cameras in place of the aforementioned detectors to provide for accurate imaging of a dynamically evolving entity.

Allowable Subject Matter

Claims 9, 11-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of record do not specifically teach the obtainment of a first derivative of each temporal point spread function and identifying on or more intervals of each temporal point spread function and storing predetermined characteristics of a corresponding object.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NASIR SHAHRESTANI whose telephone number is (571)270-1031. The examiner can normally be reached on Mon.-Thurs: 7:30-5:00, 2nd Friday: 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brian L Casler/
Supervisory Patent Examiner, Art Unit 3737

/N. S./
Examiner, Art Unit 3737